CITY OF RATHDRUM (PWS #1280152)
SOURCE WATER ASSESSMENT REPORT

December 27, 2001

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area, sensitivity factors associated with the wells, and aquifer characteristics.

This report, *Source Water Assessment for the City of Rathdrum (PWS #1280152)*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Rathdrum drinking water system consists of four wells. The wells are not currently experiencing water quality issues. However, two of the city's wells have tested positive for the presence of volatile organic chemicals in the past. The city samples the wells for volatile organic chemicals, synthetic organic and inorganic chemicals (including lead and copper) every three years (excluding the Meyer Well #2, which is used for back up and not sampled for volatile organic and synthetic organic as frequently). Radiological contaminants are measured every four years. The water system collects four samples each month to monitor the presence of total coliform bacteria. This system has been relatively free from total coliform bacteria contamination episodes.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

The City of Rathdrum should focus drinking water protection activities on developing a comprehensive drinking water protection plan that addresses public education, potential contaminant source management and contingency planning. These activities should be aimed at maintaining current water quality and preventing a reoccurrence of water samples positive for the presence of contaminants. Most of the designated source water assessment areas are located within the City of Rathdrum. The city's drinking water assessment plan should address potential growth in the surrounding area and limit the number of potential contaminant sites that are located within the wells' source water assessment areas in the future. The city may want to exercise its jurisdiction in prohibiting future development within the wells' source water assessment areas. Partnerships with state and local agencies and industry groups should be established and are critical to success. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

The large number of public water systems in Idaho drawing water from the Rathdrum Prairie Aquifer should consider forming a regional group to represent their interests before state, county and municipal governing bodies when regulatory tools like zoning overlays, or enactment of building codes are the most appropriate ground water protection measures.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies, please contact your regional Idaho Department of Environmental Quality office or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR THE CITY OF RATHDRUM

Section 1. Introduction- Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of this assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Rathdrum serves a community of approximately 3,400 people, located on the Rathdrum Prairie, 6.8 miles from the Idaho-Washington border (Figure 1). The public drinking water system for the City of Rathdrum is comprised of four wells.

The City of Rathdrum is currently not facing water quality issues. The water system collects four water samples from the distribution system monthly to check for the presence of total coliform bacteria. The last positive sample was collected 10/10/01. The system samples each well annually for nitrate and every nine years for nitrite. Both are at acceptable levels. Nitrate levels range from less than 1.0mg/L to a high of 2.22mg/L in the Grange Well on 10/26/95. The maximum contaminant level for nitrate is 10.0mg/L. Volatile organic chemicals, synthetic organic chemicals and inorganic chemicals are monitored every three years. The only exception is Meyer Well #2, which is used for back up and is not monitored for volatile organic chemicals and synthetic organic chemicals as often. Two of the wells have had samples positive for the presence of volatile organic chemicals. The Meyer Road Well showed the presence of toluene at .5µg/L on 5/14/99 and trichloroethylene at .16µg/L on 1/26/93 and .07µg/L on 10/31/95. The Grange Well also showed the presence of trichloroethylene at .14µg/L on 1/25/99. The maximum contaminant level for toluene is 1000µg/L and the maximum contaminant level for trichloroethylene is 5µg/L. Inorganic sampling has been within normal limits. Lead and copper levels and radiological levels are within normal limits.

Defining the Zones of Contribution- Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time of travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. DEQ used a refined computer model approved by the EPA in determining the three-year (Zone 1B), six-year (Zone 2), and ten-year (Zone 3) times-of-travel (TOT) for water associated with the Rathdrum Prairie aquifer in the vicinity of Rathdrum, Idaho. The computer model used site specific data, assimilated by DEQ from a variety of sources including the city and other local well logs. The delineated source water assessment areas for the City of Rathdrum wells can best be described as long, thin capture zones that extend from north to south, terminating at the wellheads. The actual data used by DEQ in determining the source water assessment delineation area are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation area were obtained by field surveys conducted by DEQ and from available databases.

It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted during September of 2001. The first phase involved identifying and documenting potential contaminant sources within the City of Rathdrum source water assessment area through the use of computer databases and Geographic Information System maps developed by DEQ. The second, or enhanced, phase of the contaminant inventory involved contacting the operator to validate the sources identified in phase one and to add any additional potential sources in the area. This task was undertaken with the assistance of Chet Anderson.

A total of two potential contaminant sites are located within each delineated source water area (Figure 2). Contaminants of concern are primarily related to fuel. Tables 1-4 list the potential contaminants of concern, time of travel zones, and information source.

Table 1. City of Rathdrum Pine Street Well Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	BML	1	Database Search	IOC, VOC, SOC
2	Railroad	10	Enhanced Inventory	IOC, VOC, SOC

Table 2. City of Rathdrum Meyer Road Well Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	BML	10	Database Search	IOC, VOC, SOC
2	Fuel Pipeline	6 and 10	Enhanced Inventory	VOC, IOC

Table 3. City of Rathdrum Meyer Well #2 Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	Fuel Pipeline	6	Enhanced Inventory	VOC, SOC
2	Railroad	6	Enhanced Inventory	IOC, VOC, SOC

Table 4. City of Rathdrum Grange Well Potential Contaminant Inventory

SITE #	Source Description[1]	TOT Zone[2] (years)	Source of Information	Potential Contaminants[3]
1	Highway	1	Enhanced Inventory	IOC, VOC, SOC, Microbial
2	Railroad	10	Enhanced Inventory	IOC, VOC, SOC

[1] BML = business mailing list

[2] TOT = time of travel (in years) for a potential contaminant to reach the wellhead

[3] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Figure 1. Geographic Location of the City of Rathdrum Wells

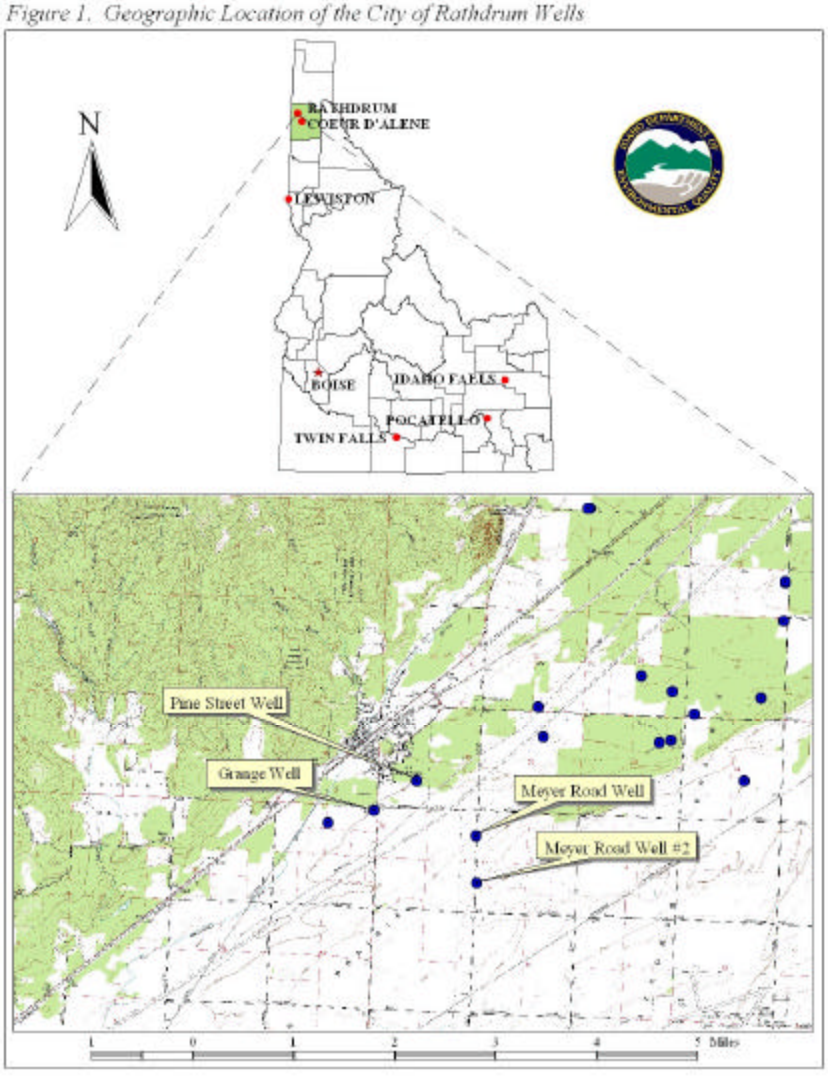


Figure 2. City of Rathdrum Delineation Map and Potential Contaminant Source Locations

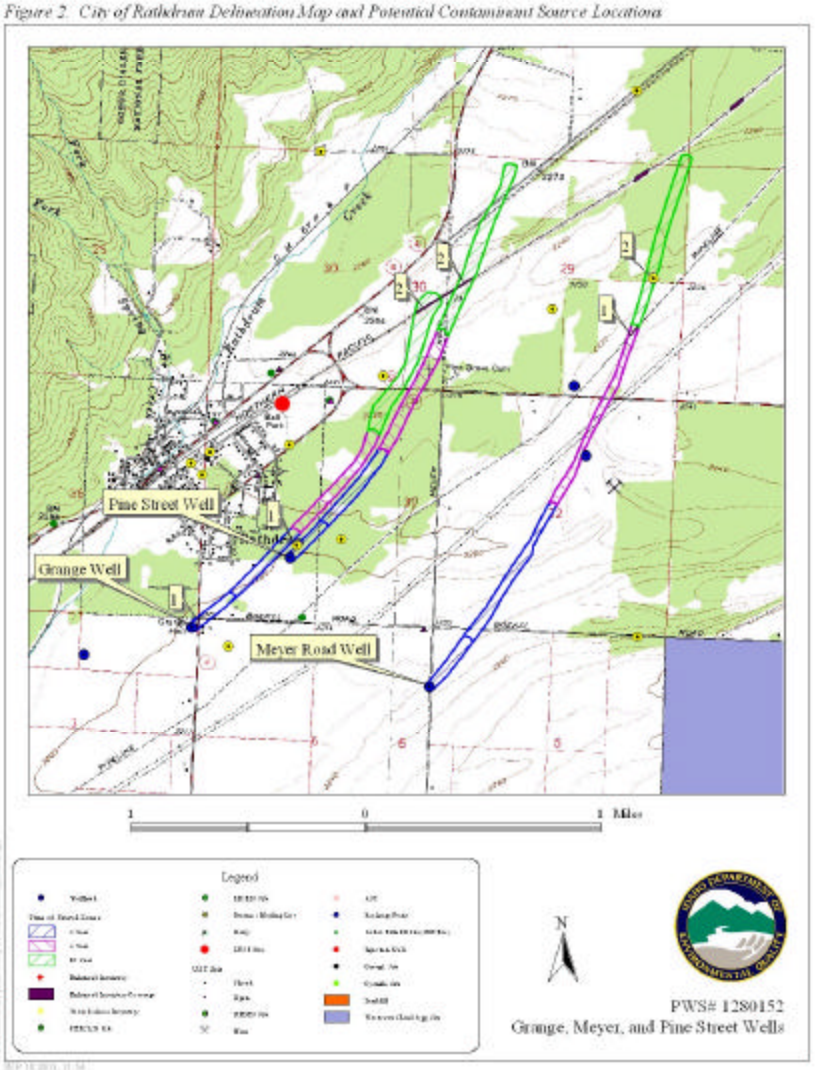
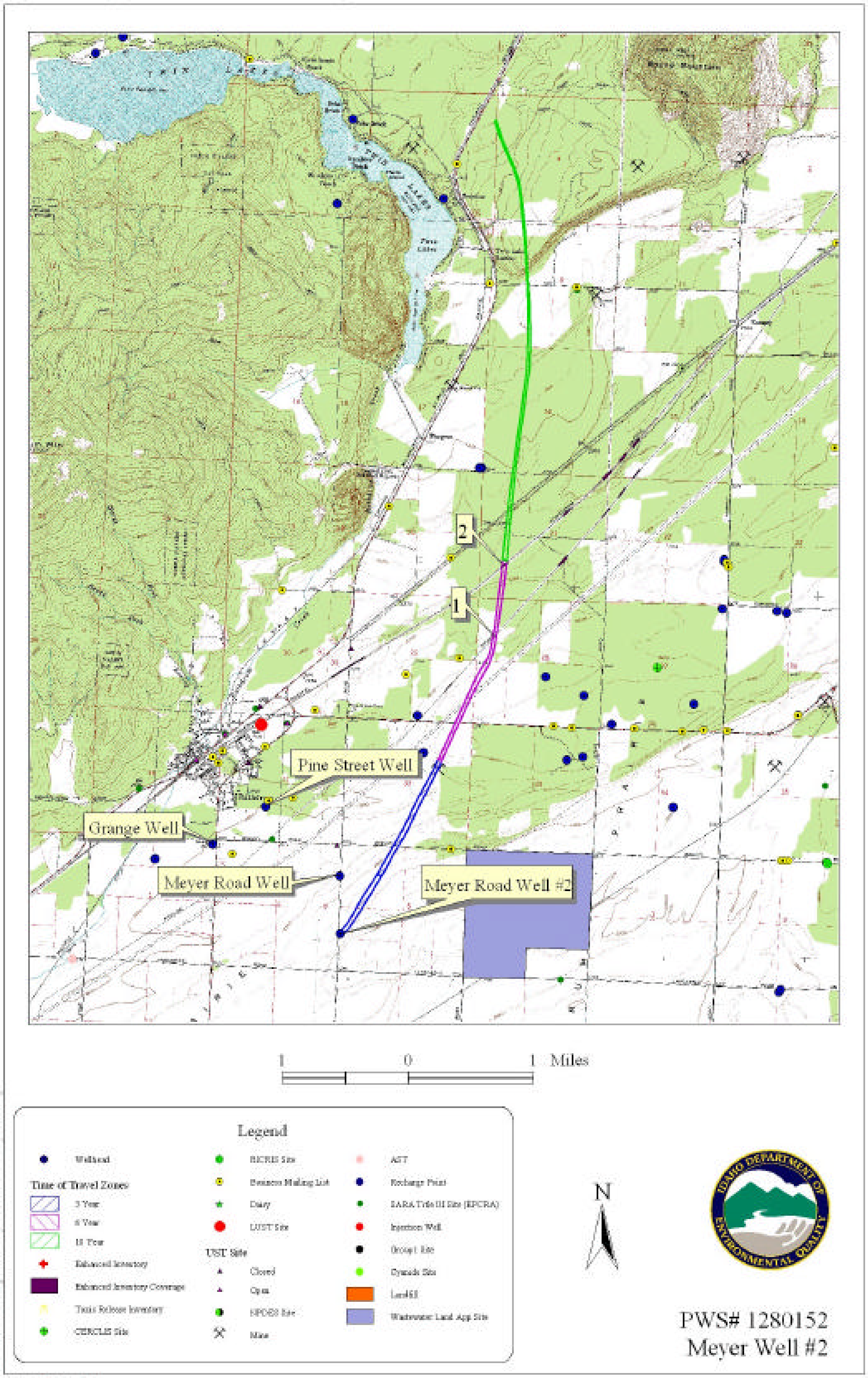


Figure 3. City of Rathdrum Delineation Map and Potential Contaminant Source Locations


2
1
Pine Street Well
Grange Well
Meyer Road Well
Meyer Road Well #2
1 0 1 Miles
Legend
Wellhead
Time of Travel Zones
3 Year
6 Year
10 Year
Enhanced Inventory
Enhanced Inventory Coverage
Toxic Release Inventory
CERCLIS Site
RICRIS Site
Business Mailing List
Dairy
LUST Site
UST Site
Closed
Open
NPDES Site
Mine
AST
Recharge Point
SARA Title III Site (EPCRA)
Injection Well
Group 1 Site
Cyanide Site
Landfill
Wastewater Land App Site
N
IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY
PWS# 1280152
Meyer Well #2

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Section 3. Susceptibility Analysis

The susceptibility of the source to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The wells' hydrologic sensitivity scores are high. This reflects porous nature of the soils associated with the Rathdrum Prairie aquifer and the lack of significant confining layers retarding the vertical transport of contaminants.

Well Construction

Well construction directly affects the ability of the wells to protect the aquifer from contaminants. Lower scores imply a system that can better protect the water. The City of Rathdrum drinking water system consists of four wells that extract ground water for domestic and industrial use. The wells' construction scores are moderate. The Idaho Department of Water Resources (IDWR) *Well Construction Standards Rules (1993)* require all public water systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works (1997)* during construction. Various aspects of the standards can be assessed from well logs. A well driller's log was available for the deepening of the Meyer Well #2 only. The majority of construction information was obtained from the 2000 sanitary survey of the wells. The Pine Street well is 240' deep with a screen at 209'. The wellhead and sanitary seal are intact. The Meyer Road well is 277' deep with a screen at 249' to 274'. Its wellhead and sanitary seal are also intact. The Meyer Well #2 was originally drilled to a depth of 310'. It was deepened in 1982 to a depth of 340'. A stainless steel well screen was set at that time from 301' to 340'. No information on the condition of Meyer Well #2's wellhead and sanitary seal was available at the time of this report. The Grange well is 265' deep with a screen at 234'. Its wellhead and sanitary seal are intact. All of the wells are located outside of the 100-year floodplain.

Potential Contaminant Source and Land Use

The dominant land uses in the area surrounding the City of Rathdrum drinking water system are residential and agriculture. The wells are located on adequate well lots. Due to the relatively low density of contaminant sites located within the wells' source water assessment areas, the wells initially rated in the low category for all chemical classes.

Final Susceptibility Ranking

In terms of the total susceptibility score, it can be seen from Table 5 that the wells showed moderate overall susceptibility scores in all categories with the exception of the Meyer Road and Grange wells. These wells were automatically assigned high susceptibility scores in the volatile organic chemical category due to the presence of volatile organic chemicals in water samples taken from them. Samples collected in 1993 and 1995 showed trichloroethylene in the Meyer Road Well and samples collected in 1999 showed toluene in the Meyer Road Well and trichloroethylene in the Grange Well.

Table 5. Summary of the City of Rathdrum Susceptibility Evaluation

	Susceptibility Scores[1]									
		Contaminant Inventory					**Final Susceptibility Ranking**			
Well	Hydrologic Sensitivity	IOC	VOC	SOC	Microbials	System Construction	IOC	VOC	SOC	Microbials
Pine Street	H	L	L	L	L	M	M	M	M	M
Meyer Road	H	L	L	L	L	M	M	H*	M	M
Meyer #2	H	L	L	L	L	M	M	M	M	M
Grange	H	L	L	L	L	M	M	H*	M	M

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
[2]H* - Indicates source automatically scored highly susceptible due to presence of a VOC in the tested drinking water

Susceptibility Summary

The City of Rathdrum drinking water system does not appear to be in eminent danger of contamination, but the city must continue to be diligent in their water sampling program to ensure that the episodes of volatile organic chemical contamination are resolved and not an ongoing problem.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area.

The State of Idaho and local health districts have instituted enhanced protection of the ground water in the Rathdrum Prairie Aquifer because of its high use and uniquely pristine water quality. The protections are generally aquifer wide and are not aimed at zones of contribution to a specific well or water system. *The Spokane Valley-Rathdrum Prairie Atlas*, sent to water systems on the prairie when they were invited to perform an enhanced contaminant inventory, describes some of the regional protection measures.

The 186 public water systems in Idaho that draw water from the Rathdrum Prairie Aquifer should consider forming a regional group to represent their interests before state, county and municipal governing bodies when regulatory tools like zoning overlays, or enactment of building codes are the most appropriate ground water protection measures. These types of measures could be used to protect the capture zones of a specific system or group of wells that could be put at risk from local land use changes.

The City of Rathdrum should focus source water protection activities on developing a comprehensive drinking water protection plan that addresses public education, potential contaminant source management and contingency planning. These activities should be aimed at maintaining current water quality and preventing a reoccurrence of water samples positive for the presence of contaminants.

Public education activities increase awareness of potential threats to drinking water, encourage voluntary drinking water protection activities and build support for regulatory initiatives. Public education activities might include informational meetings, advertisements, flyers and posters, and community and school events.

In addition to public education activities, the city's drinking water protection plan should address potential growth in the surrounding area and limit the number of potential contaminant sites that are located within the wells' source water assessment areas in the future. Regulatory and non-regulatory potential contaminant source management tools can be used to accomplish this. Regulatory tools might include zoning, potential contaminant transport restrictions, building codes and special permitting. Non-regulatory tools might include household hazardous waste collection, purchase of development rights and the encouragement of best management practices.

Lastly, a contingency plan that includes a description of the water system characteristics, a list of everyone to notify in the event of an emergency and a list of the resources available to emergency response members must be included in the system's drinking water protection plan. The plan should outline examples of responses to a variety of disaster scenarios and identify a list of response triggers. The contingency plan should also identify an alternative source of water should one become necessary. Partnerships with state and local agencies and industry groups should be established and are critical to success. Due to the time involved with the movement of ground water, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

Assistance

Public water supplies and others may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

Coeur d'Alene Regional IDEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

Website: http://www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at 1-800-962-3257 for assistance with wellhead protection strategies.

References Cited

Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, 1997. "Recommended Standards for Water Works."

Idaho Department of Environmental Quality, 1997. Design Standards for Public Drinking Water Systems. IDAPA 58.01.08.550.01.

Idaho Department of Water Resources, 1993. Administrative Rules of the Idaho Water Resource Board: Well Construction Standards Rules. IDAPA 37.03.09.

Attachment A

City of Rathdrum
Susceptibility Analysis
Worksheets

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

> 13 High Susceptibility

Ground Water Susceptibility Report Public Water System Name : RATHDRUM CITY OF Well# : PINE ST WELL

Public Water System Number 1280152 12/27/01 11:44:26 AM

1. System Construction		SCORE				
Drill Date	UNKNOWN					
Driller Log Available	NO					
Sanitary Survey (if yes, indicate date of last survey)	YES	2000				
Well meets IDWR construction standards	N/A	1				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	N/A	2				
Highest production 100 feet below static water level	NO	1				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		4				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		6				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	WELL LOT		0	0	0	0
Farm chemical use high	NO		0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO		NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A			0	0	0	0
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES		1	1	1	0
(Score = # Sources X 2) 8 Points Maximum			2	2	2	0
Sources of Class II or III leachable contaminants or	YES		1	1	1	
4 Points Maximum			1	1	1	
Zone 1B contains or intercepts a Group 1 Area	NO		0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B			3	3	3	0
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	NO		0	0	0	
Sources of Class II or III leachable contaminants or	NO		0	0	0	
Land Use Zone II	Less than 25% Agricultural Land		0	0	0	
Potential Contaminant Source / Land Use Score - Zone II			0	0	0	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES		1	1	1	
Sources of Class II or III leachable contaminants or	YES		1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO		0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III			2	2	2	0
Cumulative Potential Contaminant / Land Use Score			5	5	5	0
4. Final Susceptibility Source Score			11	11	11	10
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : RATHDRUM CITY OF Well# : MEYER RD WELL

Public Water System Number 1280152 12/27/01 11:44:48 AM

1. System Construction		SCORE			
Drill Date	UNKNOWN				
Driller Log Available	NO				
Sanitary Survey (if yes, indicate date of last survey)	YES	2000			
Well meets IDWR construction standards	N/A	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	N/A	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		6			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	WELL LOT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES*	NO	YES*	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leachable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	25 to 50% Irrigated Agricultural Land	2	2	2	2
Total Potential Contaminant Source / Land Use Score - Zone 1B		2	2	2	2
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	0	2	2	
Sources of Class II or III leachable contaminants or	YES	0	1	1	
Land Use Zone II	Greater Than 50% Irrigated Agricultural Land	2	2	2	
Potential Contaminant Source / Land Use Score - Zone II		2	5	5	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leachable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0
Cumulative Potential Contaminant / Land Use Score		6	9	9	2
4. Final Susceptibility Source Score		11	12	12	11
5. Final Well Ranking		Moderate	High*	Moderate	Moderate

*Well automatically scored high in this category due to the detection of a contaminant upon water sampling

Ground Water Susceptibility Report Public Water System Name : RATHDRUM CITY OF Well# : MEYER WELL #2

Public Water System Number 1280152 12/27/01 11:45:43 AM

1. System Construction		SCORE
Drill Date	DEEPENED 5/13/82	
Driller Log Available	YES	
Sanitary Survey (if yes, indicate date of last survey)	NO	0
Well meets IDWR construction standards	YES	0
Wellhead and surface seal maintained	UNKNOWN	1
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
	Total System Construction Score	4

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	NO	2
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
	Total Hydrologic Score	6

3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A		WELL LOT	0	0	0	0
Farm chemical use high		NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A		NO	NO	NO	NO	NO
	Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)		NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum			0	0	0	0
Sources of Class II or III leachable contaminants or		NO	0	0	0	
4 Points Maximum			0	0	0	
Zone 1B contains or intercepts a Group 1 Area		NO	0	0	0	0
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land		4	4	4	4
	Total Potential Contaminant Source / Land Use Score - Zone 1B		4	4	4	4
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present		YES	2	2	2	
Sources of Class II or III leachable contaminants or		YES	1	1	1	
Land Use Zone II	25 to 50% Irrigated Agricultural Land		1	1	1	
	Potential Contaminant Source / Land Use Score - Zone II		4	4	4	0
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present		NO	0	0	0	
Sources of Class II or III leachable contaminants or		NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of		NO	0	0	0	
	Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0	0
Cumulative Potential Contaminant / Land Use Score			8	8	8	4
4. Final Susceptibility Source Score			12	12	12	12
5. Final Well Ranking			Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : RATHDRUM CITY OF Well# : GRANGE WELL

Public Water System Number 1280152 12/27/01 11:45:23 AM

1. System Construction		SCORE
Drill Date	UNKNOWN	
Driller Log Available	NO	
Sanitary Survey (if yes, indicate date of last survey)	YES	2000
Well meets IDWR construction standards	N/A	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	N/A	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0
	Total System Construction Score	4

2. Hydrologic Sensitivity		
Soils are poorly to moderately drained	NO	2
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2
	Total Hydrologic Score	6

3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	WELL LOT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES*	NO	YES*	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0

Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	1	1	1	1
(Score = # Sources X 2) 8 Points Maximum		2	2	2	2
Sources of Class II or III leachable contaminants or	YES	1	1	1	
4 Points Maximum		1	1	1	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		3	3	3	2

Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leachable contaminants or	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0

Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leachable contaminants or	YES	1	1	1	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0
Cumulative Potential Contaminant / Land Use Score		5	5	5	2
4. Final Susceptibility Source Score		11	11	11	11
5. Final Well Ranking		Moderate	High*	Moderate	Moderate

*Well automatically scored high in this category due to the detection of a contaminant upon water sampling

Potential Contaminant Inventory
List of Acronyms and Definitions

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund@ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.